

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Period \_\_\_\_\_

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**Biology: DNA- Cracking the Code of Life**

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Please answer all questions in complete sentences. The questions are in movie order.

**Chapter 1**

1. What percentage of our genes do we have in common with a banana?
2. What does DNA look like to the naked eye?
3. What are the 4 chemicals that make up the 'steps' in the DNA ladder?
4. How many 'steps' are in the human genome?

**Chapter 2**

5. What percentage of the DNA is identical in all human babies?
6. How long did they think it would take to complete the human genome?
7. What percentage of DNA is active and important in our cells?

**Chapter 3**

8. What is Tay-Sachs disease and how does it affect a child's development?
9. How big is the mistake in the DNA code that causes Tay-Sachs?
10. What molecule does the mistake effect?
11. Blythe is a carrier for Tay-Sachs. What does this mean?

**Chapter 4 & 5**

12. How do scientists hope to use the human genome project as an early warning system?
13. How have computers helped scientists code the human genome?
14. What time frame did Venter set for completing the human genome?

**Chapter 6**

15. Whose genes were used for the human genome project?
16. How does Dr. Lander compare human's DNA to the similarity of chimpanzee DNA?
17. Why are we so similar to each other?

## **Chapter 7**

18. How are genes being turned into private property?
19. How long does it take a patent office to process an application?
20. How many applications are waiting to be processed?

## **Chapter 8**

21. Why do research companies want patents?

## **Chapter 9**

22. What does cystic fibrosis, or CF, do?
23. How are they going to try and help Riley?
24. How does the SHAPE of a protein define what it can do?
25. What is different about Riley's genetic code?
26. What does the healthy version of the cell membrane protein do?

## **Chapter 10**

27. Why are scientists so interested in Tony's CF case?
28. What do they think might be helping Tony?
29. What do genes DO?
30. How many genes do people have?
31. Although we have only twice as many genes as a fruit fly, we are more than twice as complex. How does the proteome explain this?

## **Chapter 11 & 12**

32. Why is Iceland the perfect place to look for genes causing disease?
33. What was deCodes first project?
34. How many of Mrs. Magnusdottir's siblings developed osteoarthritis?

35. What did deCode have to get from the Republic of Iceland to do their research?

### **Chapter 13**

36. Should your DNA be public or private? Why?

37. Why does having DNA public make some people nervous?

### **Chapter 14**

38. What disease did Melanie have?

39. What is the difference between the normal sequence and the sequence that causes breast cancer?

40. What percentage of breast cancer cases are linked to a mutation in the genes they found?

### **Chapter 15**

41. What did the Doctor in *GATTACA* fix in the unborn child that made the parents uneasy?

42. What might go wrong if we tried to engineer a person with the eyesight of a hawk?

43. What is the contemporary job of biology?

### **Chapter 16**

44. When was the human genome project completed?

45. What does it mean that the human genome is 'lumpy'?

46. What percent of the 3 billion letters is in genes?

47. What is 50% of the rest of the genome?